

FRANCESCO BALENA



*400 scales for
instrumentalists,
vocalists, composers
and improvisers*

THE SCALE OMNIBUS

Sold to
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THIS PDF IS AN EXCERPT AND INCLUDES A SUBSET OF ALL THE SCALES AND TABLES YOU CAN FIND IN “THE SCALE OMNIBUS”. FOR THIS REASON, SOME HYPERLINKS ARE INACTIVE AND/OR GENERATE ERRORS WHEN CLICKED. YOU CAN FIND THE FULL BOOK HERE: <https://midi2themax.gumroad.com>

Francesco Balena is a professional technical writer and software developer specialized in MIDI programming for live performances. He plays saxophone and EWI, and *The Scale Omnibus* is the result of his passion for jazz improvisation. You can find his music software at www.midi2themax.com



The Scale Omnibus has required countless days (and nights) of researching, typing, proofreading, and double-checking. I hope that instrumentalists, vocalists, composers, improvisers, students, and music hobbyists may find it useful and inspiring.

*I dedicate this book to my son Andrea,
wishing him to achieve whatever he wants from life
and have a lot of fun while doing it.*

F.B.

Introduction

All kinds of music are based on scales. In primary school, we were taught to sing the major scale, and even people who don't play a musical instrument can usually distinguish between major and minor modes. If you are a classical, jazz, or pop musician, you probably learned a few more scales, most likely the modes of the [Major](#) scale, the [Blues](#) scale and the [Pentatonic](#) scale. In most cases, you don't need to learn any other scales; after all, for centuries, classical Western composers have produced wonderful masterpieces with no more than a couple dozen different scales.

Other musical traditions are based on a larger set of scales. If you play South Indian Carnatic music, you are expected to know and practice no fewer than seventy-two different ragas. If you are from North India, you should be able to distinguish between ragas based on the time of the day and the season of the year. Many ragas have different ascending and descending forms. Learning ragas is by no means a trivial undertaking.

Regardless of which musical style you are involved in, there is an unexplored world out there based on scales you might not be familiar with. Studying and practicing uncommon scales adds new sounds to your musical vocabulary and can inspire novel ideas for composition and improvisation.

The goal

The objective of ***The Scale Omnibus*** is to provide information about the many scales you can “borrow” from all over the world, from Western composers of the past to jazz and rock improvisers of the present. When possible, a scale description includes historical or geographical notes, oddities, and trivia. If you like knowing that the *Simpson* theme is based on the [Lydian Dominant](#) scale – which was also used by composers such as Debussy, Stravinsky, and Bartók – then this book is for you.

There are many books and websites containing tons of different scales. Many classical composers are familiar with Nicolas Slonimski's *[Thesaurus of Scales and Melodic Patterns](#)*, and most jazz improvisers have studied Don Haerle's *[Scales for Jazz Improvisation](#)* or similar textbooks. These are must-read books and cover many scales in a very accurate manner; nevertheless, they leave out an even larger number of scales.

At the other side of the spectrum, you can easily find several websites with hundreds of scales, which are described in a very essential way (in most cases, just the interval list). For example, you should have a look at *The Piano Encyclopedia* (<http://pianoencyclopedia.com/scales>) or the *Huygens-Fokker* site (<http://www.huygens-fokker.org/docs/modename.html>), which also includes microtonal scales. Many [Wikipedia](#) pages are devoted to this topic – for example, search for “[List of musical scales and modes](#)” and “[Musical styles](#)” – and you can find many interesting historical and practical details.

The main shortcoming of the majority of these huge scale collections is that they fail to show the relationship between different scales. For example, none of them make it clear the the Egyptian scale, the Rui Bin Chinese scale, and the Madhyamavati Indian raga contain the same notes as the [Suspended Pentatonic](#) that is so widely used in jazz and rock, and that all of these scales are nothing but the second mode of the very popular [Major Pentatonic](#) scale. In that respect, remarkable exceptions are

Ian Ring's *The Amazing Scale Finder* (<http://ianring.com/musictheory/scales/finder.php>) and William Zeitler's website (<https://allthescales.org>): they both made a *gigantic* effort in classifying all the possible scales you can create with the 12 semitones and are probably the best source for music theory scholars. However, my goal in writing *The Scale Omnibus* was different, as I aimed at listing scales that have been *actually* used in all cultures and historical periods, so that it can be used as a source of inspirations for composers and improvisers alike.

The Scale Omnibus contains **1,054 scale names**, yet only **400 distinct scales**; thus, any given scale has about 2.5 synonyms on the average. Of those 400 distinct scales, as many as 245 scales are actually modes of another scale (e.g., the [Lydian Dominant](#) scale is mode IV of the [Melodic Minor](#) scale), which leaves just **155 scales that are truly different** – that is, they contain different sets of notes. Even if each mode of a given scale calls for a different treatment, you typically don't need to practice all the modes of a given scale, because the fingering on your instrument is the same for all of them. So the initial set of a thousand-plus scales is far more manageable than it might seem.

All the websites devoted to music scales include an example of the each scale starting on the C note or the interval list (e.g., CDEFGAB or – going by half-steps – 2212221 for the Major scale), or both. Transposing scales to other keys is often left as an exercise for the reader, as is determining which chords you can use the scale with. This book includes those pieces of information to minimize your effort.

Overview

To create some order in this vast material, the book has been organized into several sections.

The [Major and Minor Scales](#) chapter describes the [Major](#), the [Melodic Minor](#), the [Harmonic Minor](#) scales and the modes that can be derived from them.

The [Symmetrical Scales](#) section covers limited-transposition scales – that is, scales for which fewer than twelve distinct versions exist. For example, there are only two distinct [Whole-Tone](#) scales, one starting on C and the other starting on C# (the scales starting on D, E, F#, G#, and Bb are the same as the C scale).

The [Jazz Scales](#) chapter includes the many variations of the [Blues](#) and [Bebop](#) scales, whereas the [Pentatonic Scales](#) section offers an insight on the most common five-note scales used in jazz and world music. The [Modal Scales](#) section gathers variations of common modes of the major and minor scales and provides a lot of interesting hints for jazz improvisation.

The [European Scales](#), [Asian Scales](#), and [Indian Scales](#) sections group scales by their geographical origin. Indian scales typically belong to one of two groups: **melas** and **ragas**. The last chapter, [Miscellaneous Scales](#), includes African and American scales plus scales that don't fit nicely in any of the previous sections. Scales in these four chapters are listed alphabetically.

At the end of the book, you will find a few useful supplements. The [Scale Index](#) table summarizes the properties of all main scales described in more details in the various chapters. The [Scales by Name](#) table lists all scales in alphabetical order, including those that are synonyms for better-known scales. The [Scales by Interval](#) table provides a quick way to identify a scale from a group of notes or intervals.

Finally, the [Scales by Chord](#) table summarizes the scales that are typically used over different chords in jazz improvisation.

Some scales fit in more than one category, and the criteria for selecting the appropriate section were somewhat arbitrary. For example, some Indian five-note ragas were included in the [Pentatonic Scales](#) section, while others are listed in the [Indian Scales](#) section. This was done in an attempt to keep different modes of a given pentatonic scale in adjacent pages.

Selection criteria

While a great effort has been done to include as many distinct scales as possible, *The Scale Omnibus* doesn't cover all the scales that have been used over the years by musicians from all over the world. In fact, only scales meeting a few requirements are listed in this collection.

First, **only scales with five or more notes are included**. The rationale here is that scales with four or fewer notes – there are “scales” with just two notes! – may be of interest to a musicologist but are inadequate for modern compositions and improvisations.

Second, **only scales whose contiguous notes form an interval smaller than a perfect 5th** (i.e. six semitones or fewer) are included. The idea here is that scales with very large intervals between adjacent steps are of little interest for composers and improvisers.

Third, **only scales based on the twelve-tone equal temperament are included**. Microtonal scales, scales that use just temperament, and scales that use equal temperament obtained by dividing the octave in a number of intervals other than twelve – as is the case of some Arabian scales – are either not included or are approximated to the nearest twelve-tone equal temperament scale, as explained in next section. For more information, search Wikipedia for “[Equal Temperament](#).”

Fourth, in most cases **only the ascending mode of a scale is included**. There are several scales that use a different set of notes in their ascending and descending version; however, this book only lists the ascending version. There are some exceptions, though, such as the [Enigmatic](#) scale and a few Indian ragas.

Modes, intervals, chords

At the top of each page, you will find a list of the notes that make up that page's scale in the key of C, followed by a list of alternate names and synonyms for that scale (if they exist) and a list of modes that can be generated from that scale (or the name the primary scale if the current scale is itself a mode of another scale).

The selection of a given scale as the primary scale that generates one or more modes was sometimes arbitrary. For instance, while the relationship between modes of major and minor scales is clearly established – everyone agrees that the [Dorian](#) mode is the second mode of the [Major](#) scale and not the other way around – stating that the [Raga Hamsanandi](#) is the fourth mode of the [Blues](#) scale doesn't imply a similar stylistic or historical relationship. It is simply a helpful way of thinking; it tells you that if you are proficient with the Blues scale on your instrument, then you also have the Raga Hamsanandi

scale under your fingers, and it's just a matter of experimenting with how that scale sounds over selected harmonies.

Each scale is uniquely identified by its list of intervals in semitones. For example, the intervals for the Major scale are “2 2 1 2 2 2 1,” indicating two half-steps, two half-steps, one half-step, etc. I prefer this numeric notation over other popular systems – such as using an H for half-steps and a W for whole steps – because it is more intuitive for showing wider intervals.

As mentioned above, the book includes many non-Western scales – for example, Chinese and Indonesian scales – that use tuning system other than the division of the octave in 12 equal parts. In such cases, the intervals of these scales have been “rounded” to the nearest Western semitone. After this “rounding”, the scale often coincides with a more popular Western scale and is listed under the “Alternate names” section.

If a scale has a corresponding mirror scale, such mirror scale is mentioned next to the interval list. A **mirror scale** is the scale that is formed using the same intervals as the main scale, but in inverted order. For example, if you reverse the order of the intervals of the [Major](#) scale you get “1 2 2 2 1 2 2”, which are the intervals you find in the [Phrygian](#) mode, therefore the Phrygian mode is the mirror scale of the Major scale. Another way to build a mirror scale is to apply the intervals in the original order but consider them as *descending* intervals: if you start from the C note and go down using the “2 2 1 2 2 2 1” sequence, you get the C, B \flat , A \flat , G, F, E \flat , D \flat notes, which are the notes in C Phrygian. Rather than being just a curiosity, mirror scales can have a role in harmonization, as explained in this video: <https://youtu.be/Eu76BV0kzDE>. If we limit our analysis to scales that are popular enough to deserve a name, there are **230 scales that have a mirror equivalent** – or there are 115 pairs of mirror scales, if you prefer - plus **20 scales that mirror on themselves**, also known as **palindromic** scales (e.g. the [Dorian](#) mode or [Whole-Tone](#) scale, and of course the [Chromatic](#) scale). Many mirror scale are named after the main scale plus the “Inverse” word, e.g. [Harmonic Minor Inverse](#) or [Gypsy Inverse](#).

Given that we only have 12 notes to play with, any given scale has several “sibling” scales that differ only for one note, and you can go from one scale to its sibling by removing or changing an existing note, or adding a note that doesn't exist already. For example, the [Minor Pentatonic](#) and the [Blues](#) scales have the same notes, except the latter contains the augmented 4th, which is missing in the former.

In absence of more established terms, the words **subset scale** and **superset scale** have been (arbitrarily) used for such relationships: in previous example, the Blues scale is annotated as a superset of (that is, *it contains*) the Minor Pentatonic scale, which in turn is a subset scale of (*it is contained in*) the Minor Pentatonic. Another way to explain the relationship is that you can *drop* the IV degree of the Blues to obtain the Minor Pentatonic, and you can go in the opposite direction by *adding* the flat 5th degree to the Minor Pentatonic scale. This information helps you both in practicing on your instrument and in searching for scales that sound similar to those you already are familiar with.

Another way to create a “sibling” scale is by raising or lowering one of its note by a semitone. For example, you can go from the [Major](#) scale to the [Lydian](#) scale by raising the 4th degree of the former; likewise, you can go in the opposite direction by lowering the 4th degree of the latter. Again, there is no established term for this kind of relationship and this book arbitrarily uses the word **similar scales**.

For each scale, one or more chords are provided. These are the chords for which the scale can work well for improvisation. Keep in mind, though, that some scales – especially Indian ragas and scales with nine or more notes – don't easily adapt to Western harmony; their potential dissonances requires either careful handling or a special context in order to succeed. In some cases, the accompanying text specifies which notes should be avoided or used as passing notes, but most of the time, such advice has been omitted.

Scales are shown in all twelve keys, with the exception of the [Chromatic](#) scale for obvious reasons. Effort has been made to select accidentals that preserve the nature of each scale, yet also to minimize the number of accidentals and to avoid double sharps and double flats if possible. Seven-note scales typically are listed with seven distinct note names, each with the proper accidental. For non-Western scales and for scales with eight or more notes, accidentals are used more liberally.

A great advantage of an e-book over a standard paper book is that the former can include hyperlinks, both to websites and to other portions of the same document. This feature has been used extensively in the PDF version of ***The Scale Omnibus***. Virtually every scale name is a hyperlink to a page where the scale is described in detail. For example, you can quickly get more information about all the modes of a given primary scale. Hyperlinks are heavily used in the four appendices, where you can explore all scales by their name, interval set, children modes, related chords, and so forth. To get an idea of how complete and intricate this cross-reference net is, consider that the PDF contains *over five thousand hyperlinks!*

The Scale Playground app

The **Scale Playground** is a desktop software application – for Mac and Windows systems – that allows you to hear how each scale sounds like, both by itself and over chords, and even practice together with it. Plus, if you have a MIDI keyboard, you can connect it to your computer and have the application ensure that all the notes you play fit nicely in the current scale.

Read more in [Appendix F](#) or download it at <https://gumroad.com/midi2themax>.

The Scale Library for Ableton Live

The **Scale Library** is a collection of ready-to-use presets for Ableton Live's Scale device, that allows you to use any of the scales described in this book inside a Live project.

Read more in [Appendix G](#) or download it at <https://gumroad.com/midi2themax>.

Praises for “The Scale Omnibus”

The first edition of this book has been welcomed by several music teachers and performers. Here are some of their comments.

THE SCALES OMNIBUS is a precious resource for all musicians, over 400 pages devoted to musical scales from all latitudes, from the very popular to the most mysterious ones. I often find myself consulting this useful textbook together with my Conservatory students, whenever we have a doubt or look for inspiration. The many hyperlinks prove to be very useful and enrich the book, which has become a real, even-expanding enciclopedia. Thank you, Francesco.

Teo Ciavarella, pianist and teacher at G.B.Martini Conservatory (Bologna, Italy) – played with and/or recorded over 30 albums with George Garzone, Paolo Fresu, Hiram Bullock, Gerry Mulligan, Eddie Gomez, Henghel Gualdi, Lucio Dalla or his own trio.

THE SCALES OMNIBUS is an unbelievable collection of all known scales and related sound possibilities. Every scale is a journey in a “world” that sounds different and opens up countless opportunities for improvisers, composers, and performers of any music genre. This book is a stimulus for your creativity, by unveiling new musical landscapes, in a simple way. For a jazz player it is the quick and exhaustive answer to many questions. A complete research work that required a huge devotion, it’s shimmering gold.

Gaetano Partipilo, alto and soprano sax player, teacher at Siena Jazz University – played and/or recorded with Nguyễn Lê, DeeDee Bridgewater, Robin Eubanks, Mike Moreno, David Binney, Gianluca Petrella, Fabrizio Bosso, Stefano Bollani, Nicola Conte in all five continents.

I believe that THE SCALES OMNIBUS is the most interesting book about scales I have ever read. Over the years I had a look at many books on this topic, yet this omnibus is by far the most complete one and the one that goes deeper. In fact, I decided to go back to studying scales and their combinations with a fresh new approach, and used this book as a motivation for new roads in improvisation and, above all, composition.

Javier Giroto, soprano and bari sax player and music educator – leader of Aires Tango, played with Danilo Perez, George Garzone, Bob Moses, Orchestre National du Jazz (Paris), Enrico Rava, Stefano Bollani, Paolo Fresu and many others.

Inspired by this book, Javier composed “Messiango” for sax solo, based on the [Messiaen](#) scale and all its modes. Being the nice person that he is, he kindly agreed to share this composition with my readers. Find it in [Appendix E](#) or hear it here: <https://youtu.be/SnEbEJ6AxJc>.

Major and Minor Scales

Major



Alternate names: Ionian mode, Peruvian Major, Ghana Heptatonic, Ararai (Ethiopia), Xin (China), Maqam Cargah, Ajam Ashiran, Dastgah-e Mahur, Dastgah-e Rast Panjgah, Raga Bilaval That, Raga Arabhi descending, Raga Bilahari descending, Mela Shankarabharanam

Modes: [Dorian](#) (II), [Phrygian](#) (III), [Lydian](#) (IV), [Mixolydian](#) (V), [Aeolian](#) (VI), [Locrian](#) (VII)

Intervals: 2 2 1 2 2 2 1 – mirror scale of the [Phrygian](#) mode

Similar scales: [Gypsy Inverse](#) (lower degree II), [Houzam](#) (raise II), [Melodic Minor](#) (lower III), [Lydian](#) (raise IV), [Ionian b5](#) (lower V), [Ionian Augmented](#) (raise V), [Harmonic Major](#) (lower VI), [Mela Naganandini](#) (raise VI), [Mixolydian](#) (lower VII)

Subset scales: [Raga Hari Nata](#) (drop II), [Raga Nagagandhari](#) (III), [Lydian Hexatonic](#) (IV), [Scottish Hexatonic](#) (VII)

Superset scales: [Ichikotsucho](#) (add b5), [Bebop Major](#) (b6), [Bebop](#) (b7)

Chords: C, Cmaj7, C6

The major scale is the fundamental scale in all Western music and its modes are used in virtually all jazz styles. In general, the 4th degree should be used as a passing tone and resolve to the major 3rd.

Individual notes of the major scale are sometimes called with specific names: tonic (root), supertonic (2nd), mediant (3rd), subdominant (4th), dominant (5th), submediant (6th), leading tone (7th).



Dorian



Alternate names: Gregorian 8, Mischung 5 (Germany), Yu (China), Hyojo (Japan), Oshikicho (Japan), Nam (Vietnam), Raga Kafi That, Mela Kharaharapriya, Raga Bhairavi ascending, Raga Kharapriya, Raga Shree descending, Raga Bhimpalasi, Raga Nayaki Kanada, Raga Sri, Raga Ritigaula, Raga Huseni, Raga Kanara, Raga Bageshri

Mode: mode II of [Major](#) scale (C Dorian = Bb Major)

Intervals: 2 1 2 2 2 1 2 – mirror scale of itself

Similar scales: [Dorian b2](#) (lower degree II), [Mixolydian](#) (raise III), [Bebop Minor](#) (lower IV), [Romanian Minor](#) (raise IV), [Blues Heptatonic](#) (lower V), [Aeolian](#) (lower VI), [Melodic Minor](#) (raise VII)

Subset scales: [Raga Manohari](#) (drop II), [Mixolydian Hexatonic](#) (III), [Raga Manavi](#) (IV), [Raga Shreeranjani](#) (V), [Minor Hexatonic](#) (VI), [Sho](#) (VII)

Superset scales: [Adonai Malakh](#) (add b2), [Bebop Dorian](#) (3), [Blues Octatonic](#) (b5), [Dorian Aeolian](#) (b6), [Raga Mian Ki Malhar](#) (7)

Chords: Cm7, Cm7/9

In jazz improvisation, the Dorian scale is the primary choice over minor chords when they are used as IIm7 chords (e.g. Dm7 in C major key).



Phrygian



Alternate names: Major Inverse, Ousak (Greece), Zokuso (Japan), Maqam Kurd (Iraq), Selisir (Indonesia), Raga Dhanyasi descending, Mela Hanumatodi, Mela Bhairavi That, Raga Bilashkhani Todi, Raga Ghanta

Mode: mode III of [Major](#) scale (C Phrygian = A \flat Major)

Intervals: 1 2 2 2 1 2 2 – mirror scale of the [Major](#) scale

Similar scales: [Aeolian](#) (raise degree II), [Mela Ratnangi](#) (lower III), [Phrygian Dominant](#) (raise III), [Phrygian \$\natural\$](#) (lower IV), [Mela Bhavapriya](#) (raise IV), [Locrian](#) (lower V), [Dorian \$\flat\$](#) (raise VI), [Raga Malini](#) (lower VII), [Neapolitan Minor](#) (raise VII)

Subset scales: [Phrygian Hexatonic](#) (drop II), [Insen](#) (III), [Raga Kashyapi](#) (IV), [Ritzu](#) (V), [Raga Gandharavam](#) (VI), [Raga Suddha Simantini](#) (VII)

Superset scales: [Phrygian Aeolian \$\natural\$](#) (add 2), [Flamenco](#) (3), [Bebop Locrian](#) (\flat 5), [Hamel](#) (7)

Chords: Cm7

In jazz improvisation, the Phrygian scale is the primary choice over minor chords when they are used as IIIIm7 chords (e.g. Em7 in C major key).



Lydian



Alternate names: Ping (China), Gu (China), Mela Mecakalyani, Raga Shuddh Kalyan, Raga Kalyan That

Mode: mode IV of [Major](#) scale (C Lydian = G Major)

Intervals: 2 2 2 1 2 2 1 – mirror scale of the [Locrian](#) mode

Similar scales: [Raga Marwa Thaati](#) (lower degree II), [Lydian #2](#) (raise II), [Lydian Diminished](#) (lower III), [Major](#) (lower IV), [Lydian Augmented](#) (raise V), [Pelog](#) (lower VI), [Lydian #6](#) (raise VI), [Lydian Dominant](#) (lower VII)

Subset scales: [Raga Nishadi](#) (drop III), [Lydian Hexatonic](#) (IV), [Raga Mruganandana](#) (V), [Raga Ratnakanthi](#) (VI), [Raga Airavati](#) (VII)

Superset scales: [Ichikotsucho](#) (add 4)

Chords: C, Cmaj7, C#11

In modern jazz, the Lydian scale is often preferred to the [Major](#) scale over major chords because its 4th degree doesn't need to resolve down to the 3rd. This scale became very popular in modern jazz also thanks to George Russell's *Lydian Chromatic Concepts* textbook.



Mixolydian



Alternate names: Gregorian 2, Mischung 3 (Germany), Shang (China), Mela Harikamboji, Raga Kambodhi descending, Raga Khamaj That, Raga Janjhuti, Raga Harini, Raga Khambhavati, Raga Surati, Raga Balahamsa

Mode: mode V of [Major](#) scale (C Mixolydian = F Major)

Intervals: 2 2 1 2 2 1 2 – mirror scale of the [Aeolian](#) mode

Similar scales: [Harmonic Minor Inverse](#) (lower degree II), [Rock 'n Roll](#) (raise II), [Dorian](#) (lower III), [Lydian Dominant](#) (raise IV), [Mixolydian b5](#) (lower V), [Mixolydian Augmented](#) (raise V), [Melodic Major](#) (lower VI), [Major](#) (raise VII)

Subset scales: [Raga Vegavahini](#) (drop II), [Mixolydian Hexatonic](#) (III), [Mixolydian Hexatonic 2](#) (IV), [Raga Nattaikurinji](#) (V), [Raga Siva Kambhoji](#) (VI), [Scottish Hexatonic](#) (VII)

Superset scales: [Bebop Dorian](#) (add b3), [Bebop](#) (7)

Chords: C7, C9

In most jazz styles, the Mixolydian scale is the primary choice over dominant 7th chords with no altered note.



Aeolian



Alternate names: Natural Minor, Peruvian Minor, Cushak (Armenia), Ezel (Ethiopia), Geez (Ethiopia), Se (Japan), Raga Bhairavi descending, Mela Natabhairavi, Raga Jaunpuri, Raga Adana, Raga Jingla, Raga Asavari That

Mode: mode VI of [Major](#) scale (C Aeolian = E♭ Major)

Intervals: 2 1 2 2 1 2 2 – mirror scale of the [Mixolydian](#) mode

Similar scales: [Phrygian](#) (lower degree II), [Melodic Major](#) (raise III), [Sabach](#) (lower IV), [Gypsy](#) (raise IV), [Half Diminished](#) (lower V), [Dorian](#) (raise VI), [Mela Jhankaradhvani](#) (lower VII), [Harmonic Minor](#) (raise VII)

Subset scales: [Phrygian Hexatonic](#) (drop II), [Raga Navamanohari](#) (III), [Raga Trimurti](#) (IV), [Minor Hexatonic](#) (VI)

Superset scales: [Phrygian Aeolian](#) ♭4 (add ♭2), [Dorian Aeolian](#) (6), [Bebop Harmonic Minor](#) (7)

Chords: Cm7

In jazz improvisation, the Aeolian scale is the primary choice over minor chords when they are used as VIm7 chords (e.g. Am7 in C major key).



Locrian



Alternate names: Pien Chih (China), Makam Lami (Jewish), Yishtabach (Jewish)

Mode: mode VII of [Major](#) scale (C Locrian = $D\flat$ Major)

Intervals: 1 2 2 1 2 2 2 – mirror scale of the [Lydian](#) mode

Similar scales: [Half Diminished](#) (raise degree II), [Locrian Dominant](#) (raise III), [Altered Dominant](#) (lower IV), [Phrygian](#) (raise V), [Blues Phrygian](#) (lower VI), [Locrian 6](#) (raise VI), [Locrian \$\flat 7\$](#) (lower VII), [Locrian Maj7](#) (raise VII)

Subset scales: [Raga Gurjari Todi](#) (drop IV), [Ritzu](#) (V), [Honkoshi](#) (VI)

Superset scales: [Spanish Octatonic](#) (add 3), [Bebop Locrian](#) (5), [Prokofiev](#) (7)

Chords: $Cm7/\flat 5$

In jazz improvisation, the Locrian scale is the primary choice over half-diminished chords when they are used as $VIIIm7$ chords (e.g. $Bm7/\flat 5$ in C major key).



Melodic Minor



Alternate names: Ascending Minor, Mischung 1 (Germany), Mela Gaurimanohari, Raga Patdip, Raga Velavali, Raga Deshi 2

Modes: [Dorian b2](#) (II), [Lydian Augmented](#) (III), [Lydian Dominant](#) (IV), [Melodic Major](#) (V), [Half-diminished](#) (VI), [Altered Dominant](#) (VII)

Intervals: 2 1 2 2 2 2 1 – mirror scale of the [Dorian b2](#) mode

Similar scales: [Neapolitan Major](#) (lower degree II), [Major](#) (raise III), [Lydian Diminished](#) (raise IV), [Jeths](#) (lower V), [Jazz Minor #5](#) (raise V), [Harmonic Minor](#) (lower VI), [Mela Varunapriya](#) (raise VI), [Dorian](#) (lower VII)

Subset scales: [Raga Nagagandhari](#) (drop III), [Hawaiian](#) (IV), [Raga Sindhura Kafi](#) (VI), [Sho](#) (VII)

Superset scales: [Bebop Melodic Minor](#) (add b6), [Raga Mian Ki Malhar](#) (b7)

Chords: Cmin/maj7, Cmin6

In classical music, this scale has two versions: ascending and descending; the descending version has both 6th and 7th degrees flattened (i.e. A^b and B^b for the C minor melodic scale), which makes it identical to the descending form of the Aeolian mode. In jazz music, no such distinction exists.



Harmonic Minor



Alternate names: Mischung 4 (Germany), Mohammedan, Maqam Bayat-e-Esfahan (Iraq), Maqam Sultani Yakah(Iraq), Sultani Yakah, Zhalibny Minor, Raga Pilu That, Mela Kiravani, Raga Kiranavali, Raga Kirvani, Raga Kalyana Vasantha, Raga Deshi 3

Modes: [Locrian #6](#) (II), [Ionian Augmented](#) (III), [Romanian Minor](#) (IV), [Phrygian Dominant](#) (V), [Lydian #2](#) (VI), [Ultralocrian](#) (VII)

Intervals: 2 1 2 2 1 3 1 – mirror scale of the [Harmonic Minor Inverse](#) scale

Similar scales: [Neapolitan Minor](#) (lower degree II), [Harmonic Major](#) (raise III), [Sabach Maj7](#) (lower IV), [Gypsy Minor](#) (raise IV), [Harmonic Minor b5](#) (lower V), [Melodic Minor](#) (raise VI), [Aeolian](#) (lower VII)

Subset scales: [Raga Takka](#) (drop II), [Raga Bhinna Pancama](#) (III), [Raga Gchantana](#) (V), [Raga Sindhura Kafi](#) (VI)

Superset scales: [Harmonic Neapolitan Minor](#) (add b2), [Algerian Octatonic](#) (b5), [Bebop Melodic Minor](#) (6), [Bebop Harmonic Minor](#) (b7)

Chords: Cmin/maj7, Cmin/b6

The Harmonic scale and its modes have a very distinctive sound, given by the augmented 2nd interval (3 semitones) between the 6th and 7th degrees.

In classical music this scale has been used more sparingly than the Melodic Minor scale, by composers such as Bach, Mozart and Schubert (*String Quartet 1, movement 1*), usually in its descending form rather than ascending form.



Symmetrical Scales

Whole-Tone



Alternate names: Hexatonic, Anhemitonic Hexatonic, Messiaen 1st Mode, Raga Sahera, Raga Gopriya

Intervals: 2 2 2 2 2 2 – mirror scale of itself

Similar scales: [Takemitsu Tree 2](#) (lower degree III), [Prometheus](#) (raise V), [Eskimo Hexatonic](#) (lower VI), [Eskimo Hexatonic 2](#) (raise VI)

Subset scales: [Pentatonic Whole-Tone](#) (drop II)

Superset scales: [Superlocrian b3](#) (add b2), [Semilocrian b4](#) (b3), [Major Locrian](#) (4), [Lydian Dominant b6](#) (5), [Lydian Augmented Dominant](#) (6), [Leading Whole-Tone](#) (7)

Chords: Caug, C7/#5, Caug7/#11

The Whole-Tone scale is symmetrical and exist only two different versions of this scale. It can be obtained by combining two augmented triads that are one whole tone apart (e.g. C-E-G# and D-F#-A#).

In classical music, the Whole-Tone scale has been used by Mozart (*Musical Jokes* for strings and horns), Liszt (*Dante Symphony*), Berlioz, Schubert, Glinka (*Ruslan and Lyudmila*, overture), Borodin (*Prince Igor*), Rimsky-Korsakov (*Sadko*), Debussy, Alan Berg (*Violin Concert*), Bartók (*Fifth String Quartet*), and Busoni. This scale appears in many jazz compositions and improvisations, such as *JuJu* (Wayne Shorter), *One Up, One Down* (John Coltrane). Art Tatum and Thelonious Monk have used this scale extensively. It appears in bar 3 and 4 of the opening of *You Are The Sunshine of My Life* (Stevie Wonder).



Augmented



Alternate names: Major Augmented, Messiaen Truncated 3rd Mode Inverse, Genus Tertium, Raga Devamani

Modes: [Augmented Inverted](#) (II)

Intervals: 3 1 3 1 3 1 – mirror scale of the [Augmented Inverted](#) scale

Similar scales: [Raga Latika](#) (lower degree II), [Raga Takka](#) (raise III), [Lydian #2 Hexatonic](#) (raise V)

Subset scales: [Augmented Pentatonic](#) (drop VI)

Superset scales: [Phrygian b4 Maj7](#) (add b2), [Sabach Maj7](#) (2), [Sengiach](#) (4), [Mela Dhatuvardhani](#) (b5)

Chords: Caug, Cmaj7/#5, C7/#5/#9

The Augmented scale is symmetrical and exist only four different versions of this scale. It can be obtained by combining two augmented triads that are one half tone apart (e.g. C-E-G# and C#-F-A).

It made its first appearance in the work of Franz Liszt (*Faust Symphony*) and was used by Shostakovich (*Second Piano Trio*, finale), Ginastera, Prado, Bartók, Babbitt, and Schoenberg.

The scale has been extensively used in the late 50s and early 60s, by players such as Oliver Nelson (*Stolen Moments*), John Coltrane, and Michael Brecker.



Pentatonic Scales

Major Pentatonic



Alternate names: Ryosen (Japan), Yona Nuki Major (Japan), Man Jue (China), Gong (China), Peruvian Major Pentatonic, Ghana Pentatonic 2, Tezeta Major or Tizita (Ethiopia), Raga Bilahari ascending, Raga Mohanam, Raga Bhopali, Raga Deskar, Raga Kokila, Raga Jait Kalyan, Raga Bhup

Modes: [Suspended Pentatonic](#) (II), [Man Gong](#) (III), [Ritusen](#) (IV), [Minor Pentatonic](#) (V)

Similar scales: [Major Pentatonic \$\flat 2\$](#) (lower degree II), [Raga Mohanangi](#) (raise II), [Dorian Pentatonic](#) (lower III), [Ritusen](#) (raise III), [Kung](#) (lower IV), [Major Pentatonic \$\flat 6\$](#) (lower V), [Dominant Pentatonic](#) (raise V)

Superset scales: [Blues Major](#) (add $\flat 3$), [Scottish Hexatonic](#) (4), [Raga Airavati](#) ($\flat 5$), [Bebop Major Hexatonic](#) ($\flat 6$), [Mixolydian Hexatonic 2](#) ($\flat 7$), [Lydian Hexatonic](#) (7)

Intervals: 2 2 3 2 3 – mirror scale of the [Man Gong](#) scale

Chords: Cmaj7, Cmaj6, Cmaj9, Cmaj13, C7, C9, C13 – also Fmaj7, Fmaj9, $B\flat$ maj7/ $\flat 5$, $B\flat$ maj7/ $\sharp 11$, $F\sharp 7/\flat 5/\sharp 5/\flat 9/\sharp 9$

The Major Pentatonic (or just Pentatonic) scale and its four modes are by far the most common 5-note scales in Western music, including jazz and rock music. The absence of semitones in the scale encourages playing every note without having to resolve to a chord tone. John Coltrane, Art Tatum, Chick Corea, and Herbie Hancock are just a few of the jazz musicians who have massively used pentatonic scales in their compositions and improvisations.

In addition to using the Major Pentatonic scale on chords with same root as the scale, you can use it on major chords a perfect fourth or a major second below the scale root (e.g. C Major Pentatonic on F and $B\flat$ major chords), and on dominant altered chords a tritone above the scale root (e.g. C Major Pentatonic on $F\sharp 7/\flat 5/\sharp 5/\flat 9/\sharp 9$).



Suspended Pentatonic



Alternate names: Egyptian, Ambassel (Ethiopia), Yematebela Wofe (Ethiopia), Yosenpo (Japan), Shang-Diao (China), Jin-Yu or Quin-Yu (China), Rui Bin (China), Slendro (Indonesia), Raga Madhmat Sarang, Raga Madhyamavati

Mode: mode II of [Major Pentatonic](#) scale (C Suspended Pentatonic = B \flat Major Pentatonic)

Intervals: 2 3 2 3 2 – mirror scale of itself

Similar scales: [Kokin-Choshi](#) (lower degree II), [Minor Pentatonic](#) (raise II), [Dominant Pentatonic](#) (lower III), [Chaio](#) (raise IV), [Ritusen](#) (lower V), [Tcherepnin Major Pentatonic](#) (raise V)

Superset scales: [Minor Hexatonic](#) (add $\flat 3$), [Raga Siva Kambhoji](#) (3), [Raga Navamanohari](#) ($\flat 6$), [Mixolydian Hexatonic](#) (6), [Raga Brindabani](#) (7)

Chords: Csus7, Csus7/9



Modal Scales

Ionian $\flat 5$



Mode: mode II of [Blues Phrygian](#) scale (C Ionian $\flat 5$ = B Blues Phrygian)

Intervals: 2 2 1 1 3 2 1 – mirror scale of the [Mela Bravapriya](#) scale

Similar scales: [Chromatic Lydian](#) (lower degree II), [Jeths](#) (lower III), [Major](#) (raise V), [Mixolydian \$\flat 5\$](#) (lower VII)

Subset scales: [Raga Mruganandana](#) (drop IV), [Raga Hamsa Vinodini](#) (V)

Superset scales: [Ichikotsucho](#) (add 5)

Chords: Cmaj7/ $\flat 5$

Origin: Nicolas Slonimsky's *Thesaurus of Scales and Melodic Patterns* textbook.



Ionian Augmented #2



Mode: mode VI of [Double Harmonic](#) scale (C Ionian Augmented #2 = E Double Harmonic)

Intervals: 3 1 1 3 1 2 1 – mirror scale of the [Ultraphythmic](#) scale

Similar scales: [Ionian Augmented](#) (lower degree II), [Aeolian b1](#) (raise IV), [Houzam](#) (lower V), [Chromatic Phrygian](#) (raise VI), [Chromatic Hypodorian Inverse](#) (lower VII)

Chords: Cmaj7/#5



European Scales

Adonai Malakh



Mode: mode III of [Spanish Octatonic](#) scale (C Adonai Malakh = A Spanish Octatonic)

Intervals: 1 1 1 2 2 2 1 2 – mirror scale of the [Raga Mian Ki Malhar](#) scale

Similar scales: [Phrygian Aeolian](#) $\flat 4$ (lower degree VII)

Subset scales: [Dorian](#) (drop II), [Dorian](#) $\flat 2$ (III), [Mela Venaspati](#) (IV)

Superset scales: [Chromatic Diatonic Dorian](#) (add $\flat 6$)

Chords: Cm7

Adonai Malakh scale is a Jewish scale that can be obtained from the [Dorian](#) mode by adding a passing note between the root and the 2nd degree.



Enigmatic



Modes: [Mela Kantamani](#) (III ascending), [Mela Dhavalambari](#) (III, descending), [Mela Manavati](#) (VII ascending)

Intervals: 1 3 2 2 2 1 1 (ascending), 1 3 1 3 2 1 1 (descending)

Similar scales: [Leading Whole-Tone](#) (raise degree II), [Enigmatic Minor](#) (lower III), [Mela Visvambhari](#) (lower V)

Superset scales: [Enigmatic Mixed](#) (add 4)

Chords: Cmin/maj7

The Enigmatic scale is a very unusual scale with elements from major, minor and whole-tone scales. Also, its descending version has a perfect 4th instead of a raised 4th. It was invented by Italian composer Giuseppe Verdi, who used it in his *Ave Maria*. It was also used by guitarist Joe Satriani in his piece *The Enigmatic*.



Indian Scales

Mela Bhavapriya



Alternate names: Raga Bhavani, Raga Kalamurti

Mode: mode VI of [Rock 'n Roll](#) scale (C Mela Bhavapriya = Eb Rock 'n Roll)

Intervals: 1 2 3 1 1 2 2 – mirror scale of the [Ionian b5](#) scale

Similar scales: [Gypsy](#) (raise degree II), [Mela Jalarnava](#) (lower III), [Mela Namanarayani](#) (raise III), [Phrygian](#) (lower IV), [Dorian b9 #11](#) (raise VI), [Mela Gavambodhi](#) (lower VII), [Chromatic Lydian Inverse](#) (raise VII)

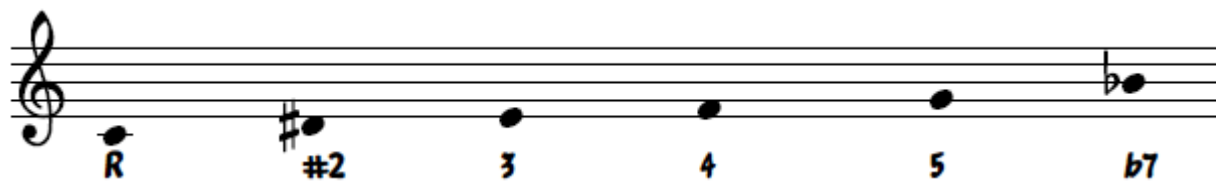
Subset scales: [Raga Kashyapi](#) (drop IV), [Raga Gurjari Todi](#) (V)

Superset scales: [Bebop Locrian](#) (add 4), [Neveseri](#) (7)

Chords: Cm7/b5



Mela Calanata



Alternate names: Raga Bhanumanjari, Raga Jog

Modes: [Raga Gurjari Todi \(III\)](#), [Raga Brindabani \(IV\)](#)

Intervals: 3 1 1 2 3 2

Similar scales: [Raga Siva Kambhoji \(lower degree II\)](#)

Subset scales: [Mixolydian Pentatonic \(drop II\)](#), [Minor Pentatonic \(III\)](#), [Major Pentatonic b7 #9 \(IV\)](#)

Superset scales: [Blues Mixed \(add b5\)](#), [Mela Ragavardhani \(b6\)](#), [Rock 'n Roll \(6\)](#), [Chromatic Dorian Inverse \(7\)](#)

Chords: C7/b9



Appendix

A. Scale Index

Major and Minor Scales

Scale	Intervals	Notes	Mode	Page
Major	2 2 1 2 2 2 1	C D E F G A B		10
Dorian	2 1 2 2 2 1 2	C D E _b F G A B _b	B _b Major (II)	11
Phrygian	1 2 2 2 1 2 2	C D _b E _b F G A _b B _b	A _b Major (III)	12
Lydian	2 2 2 1 2 2 1	C D E F [#] G A B	G Major (IV)	13
Mixolydian	2 2 1 2 2 1 2	C D E F G A B _b	F Major (V)	14
Aeolian	2 1 2 2 1 2 2	C D E _b F G A _b B _b	E _b Major (VI)	15
Locrian	1 2 2 1 2 2 2	C D _b E _b F G _b A _b B _b	D _b Major (VII)	16
Melodic Minor	2 1 2 2 2 2 1	C D E _b F G A B		17
Dorian ₁₂	1 2 2 2 2 1 2	C D _b E _b F G A B _b	B _b Melodic Minor (II)	18
Lydian Augmented	2 2 2 2 1 2 1	C D E F [#] G [#] A B	A Melodic Minor (III)	19
Lydian Dominant	2 2 2 1 2 1 2	C D E F [#] G A B _b	G Melodic Minor (IV)	20
Melodic Major	2 2 1 2 1 2 2	C D E F G A _b B _b	F Melodic Minor (V)	21
Half Diminished	2 1 2 1 2 2 2	C D E _b F G _b A _b B _b	E _b Melodic Minor (VI)	22
Altered Dominant	1 2 1 2 2 2 2	C E _b E _b E F [#] G [#] B _b	D _b Melodic Minor (VII)	23
Harmonic Minor	2 1 2 2 1 3 1	C D E _b F G A _b B		24
Locrian ₆	1 2 2 1 3 1 2	C D _b E _b F G _b A B _b	B _b Harmonic Minor (II)	25
Ionian Augmented	2 2 1 3 1 2 1	C D E F G [#] A B	A Harmonic Minor (III)	26
Romanian Minor	2 1 3 1 2 1 2	C D E _b F [#] G A B	G Harmonic Minor (IV)	27
Phrygian Dominant	1 3 1 2 1 2 2	C D _b E F G A _b B _b	F Harmonic Minor (V)	28
Lydian ₁₂	3 1 2 1 2 2 1	C D [#] E F [#] G A B	E Harmonic Minor (VI)	29
Ultralocrian	1 2 1 2 2 1 3	C D _b E _b E F [#] G [#] A	D _b Harmonic Minor (VII)	30

Symmetrical Scales

Scale	Intervals	Notes	Mode	Page
Whole-Tone	2 2 2 2 2 2	C D E F [#] G [#] B _b		31
Augmented	3 1 3 1 3 1	C D [#] E G A _b B		32
Augmented Inverted	1 3 1 3 1 3	C D _b E F G [#] A	B Augmented (II)	33
Diminished	2 1 2 1 2 1 2 1	C D E _b F F [#] G [#] A B		34
Diminished Half-tone	1 2 1 2 1 2 1 2	C C [#] D [#] E F [#] G A B _b	B _b Diminished (II)	35
Chromatic	1 1 1 1 1 1 1 1 1 1 1 1	C C [#] D D [#] E F F [#] G G [#] A B _b B		36
Tritone	1 3 2 1 3 2	C D _b E F [#] G B _b		37
Raga Neelangi	2 1 3 2 1 3	C D E _b F [#] G [#] A	G [#] Tritone (III)	38
Messiaen 2 nd Mode Truncated	1 2 3 1 2 3	C E _b E _b F [#] G A		39
Messiaen 3 rd Mode	2 1 1 2 1 1 2 1 1	C D D [#] E F [#] G G [#] B _b B		40
Messiaen 4 th Mode	1 1 3 1 1 1 3 1	C C [#] D F F [#] G A _b B		41
Messiaen 4 th Mode Inverse	3 1 1 1 3 1 1 1	C D [#] E F G _b A B _b B	B _b Messiaen 4 th Mode (III)	42
Messiaen 5 th Mode	1 4 1 1 4 1	C D _b F F [#] G B		43
Messiaen 5 th Mode Inverse	4 1 1 4 1 1	C E F G _b B _b B	B Messiaen 5 th Mode (II)	44
Messiaen 6 th Mode	2 2 1 1 2 2 1 1	C D E F F [#] G [#] A [#] B		45
Messiaen 6 th Mode Inverse	1 1 2 2 1 1 2 2	C C [#] D F F [#] G A _b B _b	A _b Messiaen 6 th Mode (III)	46
Messiaen 7 th Mode	1 1 1 2 1 1 1 2 1	C C [#] D E _b F F [#] G G [#] A B		47
Messiaen 7 th Mode Inverse	2 1 1 1 2 2 1 1 1 1	C D D [#] E F F [#] G [#] A B _b B	A Messiaen 7 th Mode (IV)	48
Genus Chromaticum	1 2 1 1 2 1 1 2 1	C C [#] D [#] E F G G [#] A B	A Messiaen 3 rd Mode (III)	49

B. Scales by Name

Scale	Origin	Intervals	Notes	Primary Scale	Page
Acoustic		2 2 2 1 2 1 2	C D E F# G A Bb	Lydian Dominant	20
Adonai Malakh		1 1 1 2 2 2 1 2	C C# D Eb F G A Bb		192
Aeolian		2 1 2 2 1 2 2	C D Eb F G Ab Bb		15
Aeolian b1		3 1 2 2 1 2 1	C D# E F# G# A B		157
Aeolian Harmonic		3 1 2 1 2 2 1	C D# E F# G A B	Lydian #2	29
Aeolian Major		2 2 1 2 1 2 2	C D E F G Ab Bb	Melodic Major	21
Aeolian Pentatonic		2 1 4 1 4	C D Eb G Ab	Ake-Bono	99
Ahava Rabba	Jewish	1 2 1 1 1 2 2 2	C C# D# E F Gb Ab Bb	Spanish Octatonic	228
Ajam Shiram		2 2 1 2 2 2 1	C D E F G A B	Major	10
Ake-Bono	Japan	2 1 4 1 4	C D Eb G Ab		99
Algerian	Tunisia	2 1 3 1 1 3 1 2 1 2	C D Eb F# G Ab B C D Eb F		401
Algerian Octatonic	Tunisia	2 1 2 1 1 1 3 1	C D Eb F F# G Ab B		400
Alhijaz	Arabia	1 3 1 2 1 2 2	C Db E F G Ab Bb	Phrygian Dominant	28
Altered Diminished		2 1 2 1 2 2 2	C D Eb F Gb Ab Bb	Half Diminished	22
Altered Lydian		2 2 2 2 1 2 1	C D E F# G# A B	Lydian Augmented	19
Altered (or Altered Dominant)		1 2 1 2 2 2 2	C Eb Eb E F# G# Bb		23
Altered Pentatonic		1 4 2 2 3	C Db F G A		109
Altered Major Pentatonic		2 2 1 3 4	C D E F Ab		110
Ambassel	Ethiopia	1 3 2 1 4	C Db F G Ab	Suspended Pentatonic	79
Ambassel Minor	Ethiopia	1 3 2 1 4	C Db F G Ab	In	97
Ancient Chinese	China	2 2 2 1 2 3	C D E F# G A	Raga Aivarati	282
Anchihoye	Ethiopia	1 4 1 3 3	C Db F Gb A		126
Anhemitonic Hexatonic		2 2 2 2 2 2	C D E F# G# Bb	Whole-Tone	31
Arabic	Arabia	1 3 1 2 1 3 1	C Db E F G Ab B	Double Harmonic	173
Ararai	Ethiopia	2 2 1 2 2 2 1	C D E F G A B	Major	10
Arezzo Major Diatonic Hexachord		2 2 1 2 2 3	C D E F G A	Scottish Hexatonic	224
Ascending Minor		2 1 2 2 2 2 1	C D Eb F G A B	Melodic Minor	17
Augmented		3 1 3 1 3 1	C D# E G Ab B		32
Augmented Inverted		1 3 1 3 1 3	C Db E F G# A		33
Augmented Pentatonic		3 1 3 1 4	C D# E G Ab		113
Augmented Pentatonic 2		4 2 2 3 1	C E F# G# B		114
Avaha or Ahava Rabba	Jewish	1 3 1 2 1 2 2	C Db E F G Ab Bb	Phrygian Dominant	28
Bac	Vietnam	2 3 2 2 3	C D F G A	Ritusen	81
Banshikicho	Japan	2 1 1 3 2 1 2	C D D# E G A Bb	Bebop Minor	71
Bartok		2 2 2 1 2 1 2	C D E F# G A Bb	Lydian Dominant	20
Batti Minor	Ethiopia	3 2 2 3 2	C Eb F G Bb	Minor Pentatonic	82
Batti Minor #4	Ethiopia	3 3 1 3 2	C Eb F# G Bb	Raga Samudhra Priya	371
Batti Minor 4/#7	Ethiopia	3 3 1 4 1	C Eb F# G B	Raga Multani 2	347
Batti Major	Ethiopia	4 1 2 4 1	C E F G B	Ionian Pentatonic	88
Batti Major #4	Ethiopia	4 2 1 4 1	C E F# G B	Hirajoshi	98
Batti Major #5	Ethiopia	4 1 3 3 1	C E F G# B	Romanian Bacovia	124
Bebop Chromatic		1 1 2 1 2 2 1 1 1	C C# D E F G A Bb B		77
Bebop Dorian		2 1 1 1 2 2 1 2	C D D# E F G A Bb		72
Bebop Half-diminished		1 2 2 1 1 1 3 1	C Db Eb F F# G Ab B		75
Bebop Harmonic Minor		2 1 2 2 1 2 1 1	C D Eb F G Ab Bb B		74
Bebop Locrian		1 2 2 1 1 1 2 2	C Db Eb F F# G Ab Bb		76
Bebop Major		2 2 1 2 1 1 2 1	C D E F G G# A B		68
Bebop Major Heptatonic		2 2 1 2 1 1 3	C D E F G G# A		70
Bebop Major Hexatonic		2 2 3 1 1 3	C D E G G# A		69
Bebop Melodic Minor		2 1 2 2 1 1 2 1	C D Eb F G G# A B		73
Bebop Minor		2 1 1 3 2 1 2	C D D# E G A Bb		71
Bebop Mixolydian		2 2 1 2 2 1 1 1	C D E F G A A# B	Bebop	67
Bebop Natural Minor		2 1 2 2 1 2 1 1	C D Eb F G Ab Bb B	Bebop Harmonic Min.	74
Bebop (or Bebop Dominant)		2 2 1 2 2 1 1 1	C D E F G A Bb B		67
Belinese	Bali	1 2 4 1 4	C Db Eb G Ab	Pelog Pentatonic	89

C. Scales by Interval

5-Note Scales

Scale	Intervals	Notes	Mode	Page
Raga Nabhomani	1 1 4 1 5	C C# D F# G		348
Raga Putrika	1 1 6 1 3	C C# D G# A	C# Raga Deshgaur (V)	360
Raga Kumarapriya	1 1 6 3 1	C C# D G# B		326
Raga Chitthakarshini	1 2 2 3 4	C D _b E _b F A _b	A _b Raga Nagaswaravali (II)	117
Raga Chaya Todi	1 2 3 2 4	C D _b E _b G _b A _b	A _b Mixolydian Pentatonic (II)	294
Major Pentatonic $\text{1}\flat 3$	1 2 3 3 3	C D _b E _b F# A		103
Pelog Pentatonic	1 2 4 1 4	C D _b E _b G A _b	A _b Ionian Pentatonic (II)	89
Raga Rukmangi	1 2 4 3 2	C D _b E _b G B _b	B _b Raga Abhogi (II)	369
Greek Arkaik	1 3 1 1 6	C D _b E F G _b		125
Syrian Pentatonic	1 3 1 3 4	C D _b E F A _b		125
Raga Megharamji	1 3 1 6 1	C D _b E F B		343
Major Pentatonic $\text{1}\flat 5$	1 3 2 3 3	C D _b E G _b A		102
Major Pentatonic $\text{1}\flat 2$	1 3 3 2 3	C E _b E G A		101
Raga Manaranjani	1 3 3 3 2	C D _b E G B _b		338
Anchihoye	1 4 1 3 3	C D _b F G _b A		126
Iwato	1 4 1 4 2	C D _b F G _b B _b	F In (IV)	100
In	1 4 2 1 4	C D _b F G A _b		97
Altered Pentatonic	1 4 2 2 3	C D _b F G A		109
Kokin-Choshi	1 4 2 3 2	C D _b F G B _b	B _b Dorian Pentatonic (II)	84
Raga Kshanika	1 4 3 3 1	C D _b F A _b B		325
Raga Saugandhini	1 5 1 1 4	C D _b F# G A _b	F# Raga Nabhomani (IV)	376
Raga Deshgaur	1 6 1 3 1	C D _b G A _b B		296
Nando-Kyemyonjo	2 1 2 2 5	C D E _b F G		236
Raga Audav Tukhari	2 1 2 3 4	C D E _b F A _b		284
Raga Abhogi	2 1 2 4 3	C D E _b F A		281
Ake-Bono	2 1 4 1 4	C D E _b G A _b	G In (III)	99
Dorian Pentatonic	2 1 4 2 3	C D E _b G A		83
Pygmy	2 1 4 3 2	C D E _b G B _b		121
Raga Hamsadhvani	2 1 4 4 1	C D E _b G B		310
Raga Budhamanohari	2 2 1 2 5	C D E F G		289
Altered Major Pentatonic	2 2 1 3 4	C D E F A _b		110
Kung	2 2 2 3 3	C D E G _b A	D Dominant Pentatonic (V)	96
Raga Kumurdaki	2 2 2 5 1	C D E F# B		327
Major Pentatonic $\text{1}\flat 6$	2 2 3 1 4	C D E G A _b	G Altered Pentatonic (III)	104
Major Pentatonic	2 2 3 2 3	C D E G A		78
Dominant Pentatonic	2 2 3 3 2	C D E G B _b		92
Raga Hamsadhvani 2	2 2 3 4 1	C D E G B	G Raga Nagaswaravali (III)	118
Raga Neroshta	2 2 5 2 1	C D E A B	A Nando-Kyemuonjo (III)	353
Han-Kumoi	2 3 2 1 4	C D F G A _b	F Dorian Pentatonic (IV)	86
Ritusen	2 3 2 2 3	C D F G A	F Major Pentatonic (IV)	81
Suspended Pentatonic	2 3 2 3 2	C D G G B _b	B _b Major Pentatonic (II)	79
Tcherepnin Major Pentatonic	2 3 2 4 1	C D F G B	G Mixolydian Pentatonic (III)	108
Chaio	2 3 3 2 2	C D F G# B _b	B _b Dominant Pentatonic (II)	93
Raga Priyadarshini	2 3 3 3 1	C D F G# B	B Major Pentatonic $\text{1}\flat 3$ (II)	358
Pyeong Jo	2 3 4 1 2	C D F A B _b	F Raga Nagaswaravali (IV)	119
Raga Rasranjani	2 3 4 2 1	C D F A B	A Raga Audav Tukhari (III)	366
Raga Shri Kalyan	2 4 1 2 3	C D F# G A	D Mixolydian Pentatonic (V)	379
Raga Hamsanada	2 4 1 4 1	C D F# G B	G Ionian Pentatonic (III)	90
Raga Shubravarni	2 4 3 1 2	C D F# A B _b		380
Raga Matha Kokila	2 5 2 1 2	C D G A B _b	G Nando-Kyemuonjo (IV)	342
Center-Cluster PentaMirror	3 1 1 3 4	C D# E F A _b		113
Locrian Pentatonic	3 1 2 4 2	C D# E G _b B _b		110
Augmented Pentatonic	3 1 3 1 4	C D# E G A _b		113

E. "Messiango" by Javier Giroto

Soprano Sax

MESSIANGO

Tango with Messiaen Modes Scales

JAVIER GIROTO

Ab Messiaen 4° Mode Inverse

4

8

C Messiaen 4° Mode

11

Db Messiaen 5° Mode Inverse

15

Db Messiaen 5° Mode Inverse

18

22

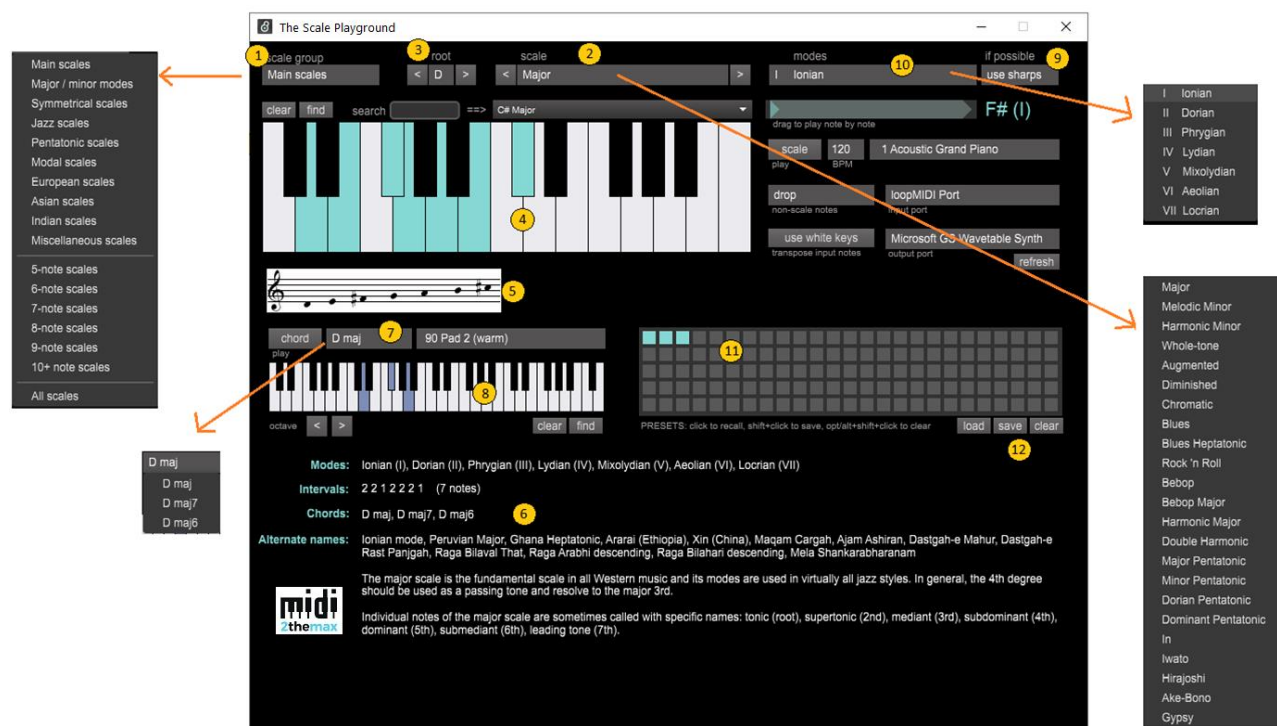
1.

2.

25

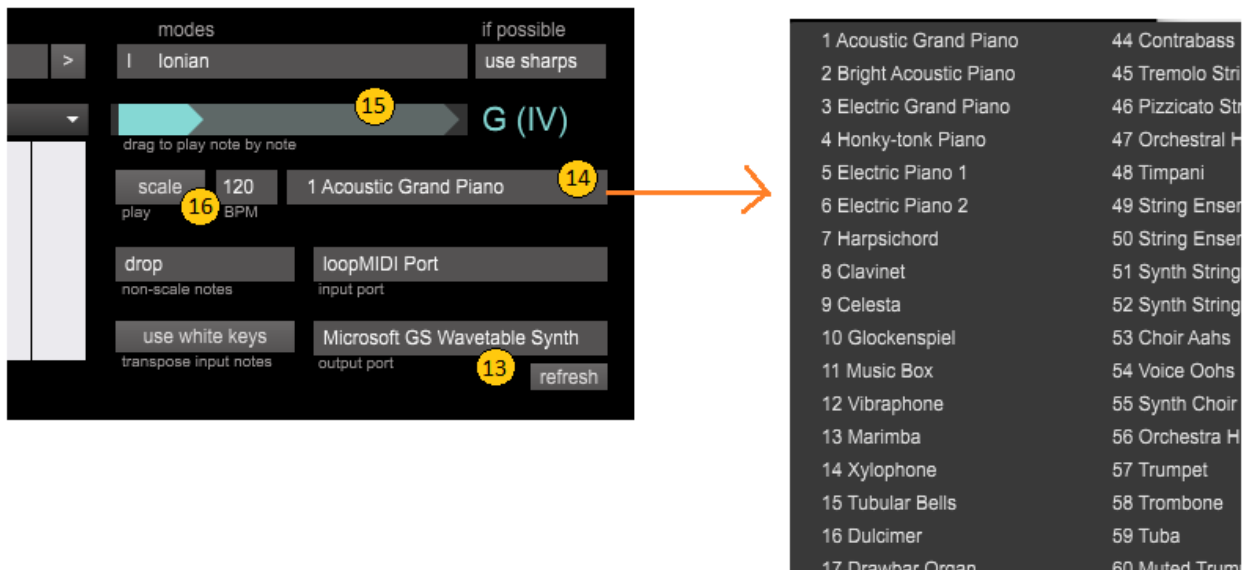
F. The Scale Playground

The Scale Playground is a desktop software - available for both Mac and Windows - that allows you to view, search, hear, play and practice 400 scales from all over the world and for all music genres. It consists of one single window and it takes only a few minutes to get familiar with all its features.



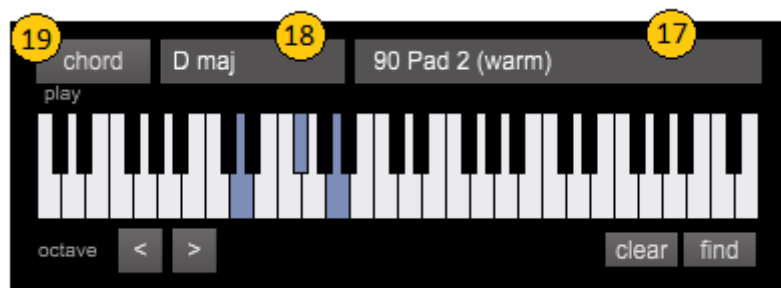
- (1) select a scale group – scales are organized by their type, geographical origin, or number of notes
- (2) select a scale from the group – or use the < > buttons to browse all scales in current group
- (3) select a scale root – or use the < > button to move through all 12 keys
- (4) the result scale appears in the larger keyboard ...
- (5) ... and on the musical staff
- (6) additional information about the scale appear in the bottom half of the window
- (7) you can now select one of the chords that go well with the scale ...
- (8) ... and see the chord notes in the smaller keyboard
- (9) use this menu to display scales *preferably* using flats instead of sharps – if possible
- (10) if the current scale is a mode of another scale, you can read that scale's name at the top of this menu – open the menu to see other modes and select one to make it the current scale
- (11) this panel allows you to save your favorite scales (plus root key and some other settings) in a preset – use shift+click to save, click to recall, and opt+shift+click (on Mac) or alt+shift+click (on Windows) to recall a stored preset
- (12) these buttons allow you to **save** current presets to disk, **load** a saved group or presets, or **clear** the preset panel

The application provides a couple ways to hear the current scale:



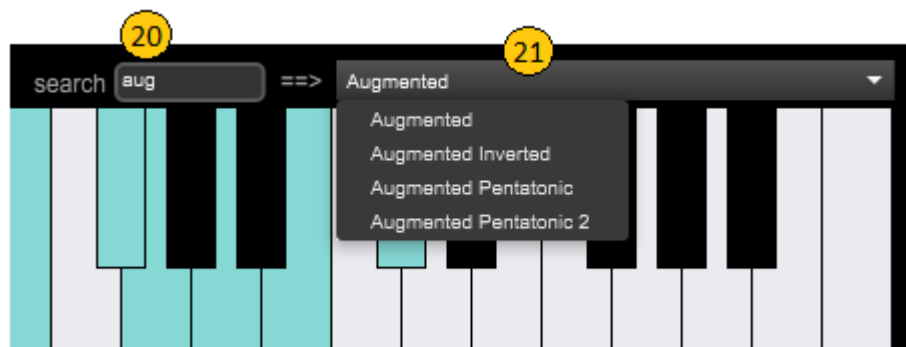
- (13) first, select an output MIDI port connecting to an virtual or physical instrument that recognizes General MIDI 2 instruments ...
- (14) ... and then select one of the 128 timbres that GM2 provides
- (15) next, you can either drag the arrow slider to hear the current scale (within two octave range)
- (16) ... or click on the **scale** button to have the application play the scale for you and adjust the BPM field if you want it slower or faster – this is GREAT for practicing!

You can hear how the scale sounds over a chord using the controls near the smaller keyboard:



- (17) first, select a proper GM2 instrument for chords – these are going to be sustained, thus pads, organs and string sections are best
- (18) select one chord from this menu
- (19) click the **chord** button to start the sound – it will stay active if you select a different chord, a different scale or mode

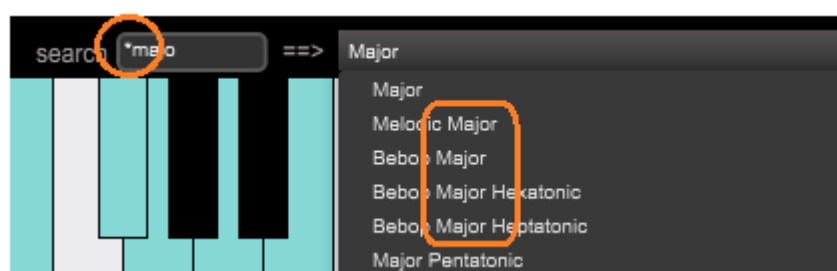
The Scale Playground allows you to find a scale quickly, by either its name or the notes it contains:



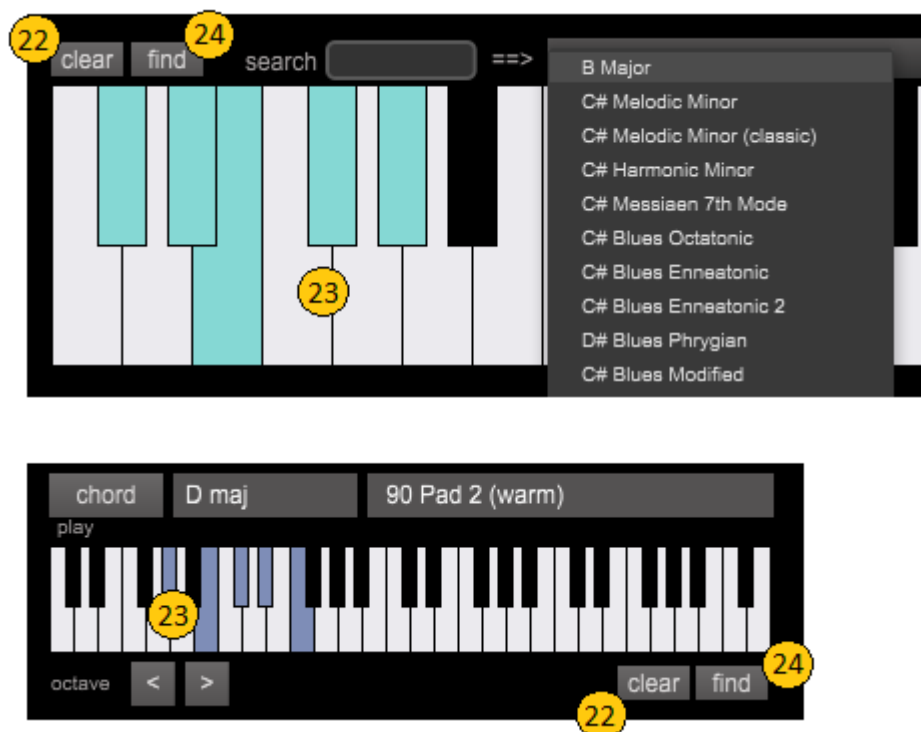
(20) type some characters in the **search** field

(21) ... to fill the menu on its right with all scales whose name ***begins*** with those characters

If the first character is an asterisk, the menu will be filled with scale names that ***contain*** the characters:



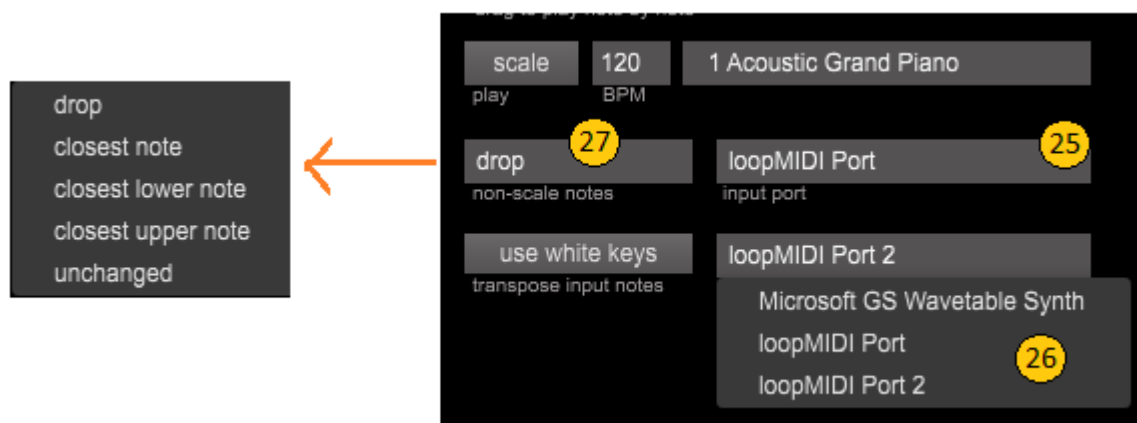
You can search a scale by the notes it contains using either the larger or the smaller keyboard, because both are surrounded by buttons with same name:



(22) use the **clear** button to start with a clean keyboard if necessary - or start with the notes of the current scale or the current chord

- (23) then select or unselect keys on the keyboard ...
- (24) ... and finally click the **find** button to see the list of matching scales – unlike searches by name, in this case the result includes the root note of the scale (which isn't necessarily the lowest note selected on the keyboard)

The Scale Playground can be useful in live performances. If you aren't familiar yet with a scale – perhaps in an unusual key such as F# or D \flat - you can place the application “between” your MIDI keyboard and the virtual or physical instrument you are playing, by using virtual MIDI ports.



- (25) select the MIDI input port to which your MIDI keyboard is connected – **TIP:** if you don't see the port, click the **refresh** button
- (26) select the MIDI output port where MIDI notes will go – it can be a physical port that is connected to a hardware instrument, or a virtual MIDI port that sends to a program such as Ableton Live, Logic, Reason, etc.
- (27) decide how non-scale notes must be processed – the **unchanged** setting basically allows you to disable the scale quantization feature

That's all. You can now experiment, test new scales, and practice them. And just play!

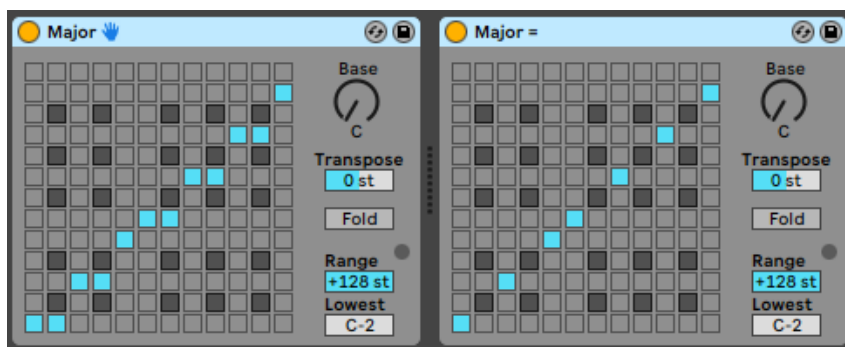
You can buy **The Scale Playground** for a very affordable price at <https://gumroad.com/midi2themax>.

The downloadable item contains both the MacOS and Windows versions.

G. Scale Library for Ableton Live

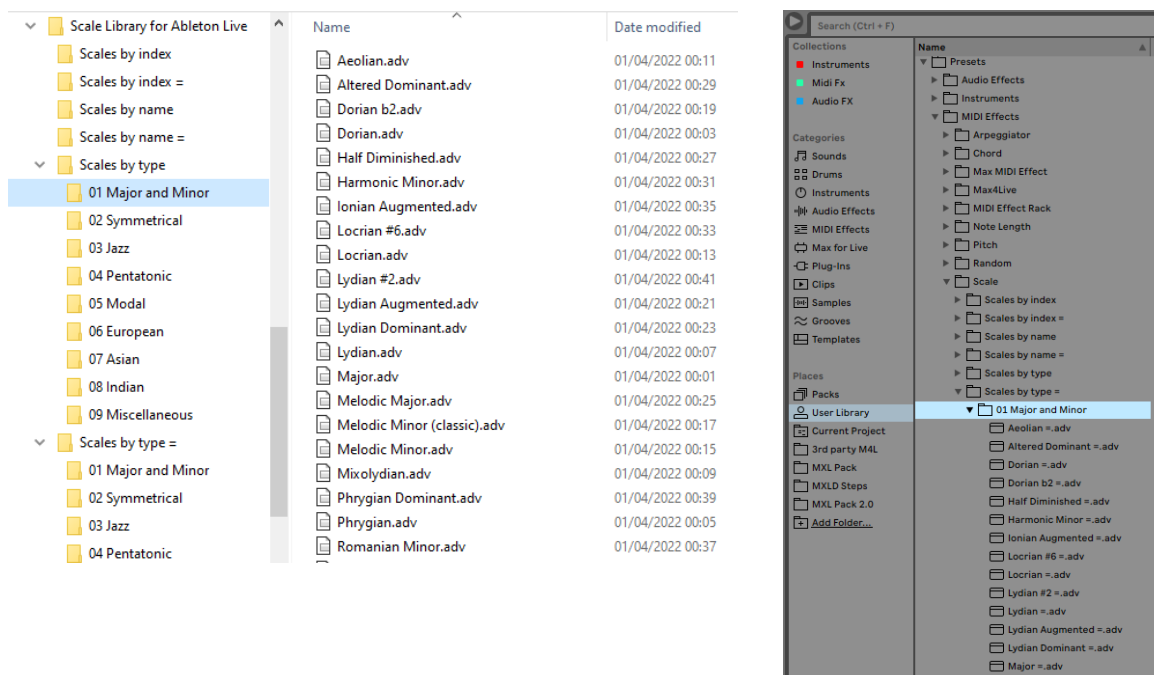
The **Scale Library** is a collection of presets for the Scale device of Ableton Live software, that allows you to be immediately productive with any scale described in this book and ensure that all the notes you play belong to the selected scale.

For each scale two presets are provided: the former “quantizes” incoming notes to the nearest note of the selected scale (see left portion of image below), the latter “blocks” non-scale notes and can be identified by a trailing “=” symbol in its name (see right portion):



Each preset file is duplicated three times in the library. This redundancy allows you to quickly find a scale using any of the following criteria:

- **by scale index** – scales are listed in the order used in this book
- **by scale name** – scales are listed alphabetically
- **by scale type** – scales are categorized using the same criteria adopted in this book (major and minor scales, symmetrical scales, pentatonic, etc.)



You can download **The Scale Playground** at <https://gumroad.com/midi2themax>.